

1 What is claimed is:

2 1. A miniature vehicle comprising:

3 a frame;

4 a propulsion system mounted on said frame;

5 a hydraulic system mounted on said frame;

6 a first actuator functionally connected to said propulsion system; and

7 a second actuator functionally connected to said hydraulic system.

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9 2. The miniature vehicle of claim 1, wherein said propulsion system and said hydraulic
10 system operate to perform work.

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12 3. The miniature vehicle of claim 1, further comprising a remote-control system
13 functionally attached to said first actuator and said second actuator.

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15 4. The miniature vehicle of claim 3, wherein said remote-control system comprises a radio-
16 control system

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18 5. The miniature vehicle of claim 1, wherein said miniature vehicle comprises a scale-size
19 version of a full-size vehicle.

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21 6. The miniature vehicle of claim 1, wherein said propulsion system comprises a plurality of
22 metal tracks.

1 7. The miniature vehicle of 6, wherein said propulsion system further comprises a discrete
2 control mechanism for each of said plurality of metal tracks.

3
4 8. The miniature vehicle of claim 6, wherein said propulsion system further comprises:
5 a power source;
6 a motor functionally connected to said power source, wherein said motor comprises an
7 output shaft;
8 a first gear coaxially attached to said output shaft;
9 a second gear engaged with said first gear;
10 a drive shaft coaxially attached to said second gear; and
11 a third gear coaxially attached to said drive shaft, wherein at least one of said plurality of
12 metal tracks engaged with said third gear.

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14 9. The miniature vehicle of claim 8, wherein said power source comprises a gel-cell battery.

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16 10. The miniature vehicle of claim 8, wherein said motor comprises an electric motor.

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18 11. The miniature vehicle of claim 8, wherein said propulsion system further comprises a
19 plurality of rollers attached to said frame and engaged with each of said plurality of metal tracks.

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21 12. The miniature vehicle of claim 6, wherein each of said plurality of metal tracks further
22 comprises a plurality of metal links, each of said plurality of metal links having an inner surface,
23 wherein a pair of spaced apart connectors project from the inner surface, and wherein the pair of

1 spaced apart connectors of each of said plurality of metal links is pivotally attached to the pair of
2 spaced apart connectors of an adjacent metal link so as to form a continuous loop.

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4 13. The miniature vehicle of claim 1, further comprising a body mounted on said frame.

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6 14. The miniature vehicle of claim 13, wherein said body comprises a bulldozer body.

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8 15. The miniature vehicle of claim 13, wherein said body comprises a truck body.

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10 16. The miniature vehicle of claim 13, wherein said body comprises a crane body.

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12 17. The miniature vehicle of claim 13, wherein said body comprises a tank body.

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14 18. The miniature vehicle of claim 1, further comprising a video camera mounted on said
15 frame.

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17 19. The miniature vehicle of claim 1, further comprising a sensor mounted on said frame.

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19 20. The miniature vehicle of claim 1, further comprising a sample gatherer mounted on said
20 frame.

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22 21. The miniature vehicle of claim 1, wherein said hydraulic system comprises:
23 a master cylinder having an input shaft;

1 a slave cylinder having an output shaft; and
2 a hydraulic line in fluid communication between said master cylinder and said slave
3 cylinder.
4

5 22. The miniature vehicle of claim 1, wherein said first actuator comprises:
6 a power source; and
7 an electronic speed control electrically connected to said power source.
8

9 23. The miniature vehicle of claim 1, wherein said second actuator comprises:
10 a power source;
11 a motor operably connected to said power source;
12 an output shaft extending from said motor;
13 a pinion gear coaxially attached to said output shaft; and
14 a rack transversely engaged with said pinion gear and rigidly attached to said hydraulic
15 system.
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17 24. The miniature vehicle of claim 23, further comprising:
18 a switch functionally connected between said power source and said motor; and
19 a servo functionally attached to said switch.
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21 25. The miniature vehicle of claim 24, further comprising a remote-control system
22 functionally attached to said servo.
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1 26. The miniature vehicle of claim 1, further comprising a bulldozer blade assembly mounted
2 functionally on said frame.

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4 27. The miniature vehicle of claim 26, wherein said bulldozer blade assembly comprises
5 a bulldozer blade and a bulldozer blade arm, wherein said bulldozer blade arm is pivotally
6 connected to said frame, functionally connected to said hydraulic system, and rigidly connected
7 to said bulldozer blade.

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9 28. The miniature vehicle of claim 1, further comprising a ripper assembly.

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11 29. The miniature vehicle of claim 28, wherein said ripper assembly comprises:
12 a parallelogram ripper arm having a first member, a second member, a third member, and
13 a fourth member, wherein said first member is pivotally attached to a first end of said third
14 member and pivotally attached to a first end of said fourth member, said second member is
15 pivotally attached to a second end of said third member and pivotally attached to a second end of
16 said fourth member, and said first member is rigidly attached to said frame; and
17 a multi-shank ripper rigidly connected to said second member and functionally connected
18 to said hydraulic system.

19
20 30. A miniature vehicle comprising:
21 a frame;
22 a propulsion system mounted on said frame;
23 a hydraulic system mounted on said frame;

1 a first actuator functionally connected to said propulsion system;
2 a second actuator functionally connected to said hydraulic system; and
3 a remote-control system functionally attached to said first actuator and said second
4 actuator;
5 wherein the miniature vehicle further comprises a scale-size version of a full-size
6 vehicle,
7 wherein said propulsion system further comprises a plurality of metal tracks, each of
8 said plurality of metal tracks having a discrete control mechanism, and
9 wherein said propulsion system and said hydraulic system are operable to perform
10 work.

- 11
12 31. A hydraulic system for a miniature vehicle comprising:
13 a master cylinder having an input shaft;
14 a slave cylinder having an output shaft; and
15 a hydraulic line in fluid communication between said master cylinder and said slave
16 cylinder.
17
18 32. The hydraulic system of claim 31, further comprising an actuator attached to said input
19 shaft.
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21 33. The hydraulic system of claim 32, wherein said actuator comprises:
22 a power source;
23 a motor operably connected to said power source;

1 an output shaft extending from said motor;
2 a pinion gear coaxially attached to said output shaft; and
3 a rack transversely engaged with said pinion gear and rigidly attached to said input shaft.
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5 34. The hydraulic system of claim 33, further comprising:
6 a switch functionally connected between said power source and said motor; and
7 a servo functionally attached to said switch.
8

9 35. The hydraulic system of claim 34, further comprising a remote-control system
10 functionally attached to said servo.
11

12 36. The hydraulic system of claim 35, wherein said remote-control system comprises a radio-
13 control system.
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15 37. The hydraulic system of claim 33, further comprising a bulldozer blade assembly
16 functionally connected to said output shaft.
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18 38. The hydraulic system of claim 33, further comprising a ripper assembly to said output
19 shaft.
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21 39. A metal track for a miniature vehicle comprising a plurality of metal links pivotally
22 attached to one another so as to form a continuous loop.
23

1 40. The miniature vehicle of claim 39, wherein each of said plurality of metal tracks further
2 comprises a plurality of metal links, each of said plurality of metal links having an inner surface,
3 wherein a pair of spaced apart connectors project from the inner surface, and wherein the pair of
4 spaced apart connectors of each of said plurality of metal links is pivotally attached to the pair of
5 spaced apart connectors of an adjacent metal link so as to form a continuous loop.

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